

support is found for amended Paragraph [0007] in Claim 1 as originally filed. For amended Paragraph [0035], support is found in Claims 25 and 26 as originally filed. Support is found in the paragraphs as originally filed for amended Paragraphs [0002], [0005], [0025], [0027], [0030], [0032], [0033], [0038], [0044], and [0068].

[0002] Dynamic gaskets are typically formed of cured elastomeric materials having a desirable set of physical properties typical of the elastomeric state. These gaskets typically show a high tendency to return to their original sized size and shape following removal of a deforming force, and they retain physical properties after repeated cycles of stretching, including strain levels up to 1000%. Based on these properties, the cured elastomeric materials are generally useful for making dynamic seal articles such as seals and gaskets.

[0005] To meet the demands of the new lubricant technology, seals using fluorocarbon elastomers have been developed that are highly resistant to the basic compounds found in the lubricating oils and greases. Specifically, seals formed of cured elastomers based on copolymers of tetrafluoroethylene and propylene have met great commercial success. As a thermoset material, the cured fluorocarbon rubber is subject to the processing disadvantages noted above.

[0007] The present invention provides dynamic seal assemblies for installation between first and second relatively rotating members, comprising: a ring for fixed engagement with said first member and an annular seal extending radially from said ring and configured to slidably engage said second member, wherein said radial seal has a thickness and a length that is from about 1 to about 15 times greater than said thickness. In various embodiments, the assembly comprises a dynamic seal for installation between an inner rotating shaft and outer non-rotating housing comprising. The seal has a first ring for fixed engagement with the housing, including an annular radial seal extending from the first ring into sliding contact with the shaft. The

annular radial seal, which is configured to slidably engage the rotating shaft has a thickness, and a length being ~~greater than and less than about~~ from about 1 to about 15 times greater than the thickness.

[0025] In various embodiments, the dynamic seal 10 is formed of a processable rubber composition[[s]] comprising a vulcanized elastomeric material dispersed in a matrix. The vulcanized elastomeric material is the product of vulcanizing, crosslinking, or curing a fluorocarbon elastomer. The matrix is made of a thermoplastic material containing at least one containing thermoplastic polymer. The processable rubber compositions may be processed by conventional thermoplastic techniques to form dynamic seals having physical properties that make them useful in a number of applications calling for elastomeric properties.

[0027] As can be seen in Figure 2b, the dynamic seal 10b ~~as~~ can have a bearing surface 20b which is substantially variegated. In this regard, a spiral groove 24 is formed onto a portion of the flat bearing surface 20b. It is envisioned that there can be between 5 and 200 grooves per inch, and these grooves would cover between 10 and 90%, and preferably 25-75% of the flat bearing surface. The number of spiral grooves which contact with the shaft surface is between 1 and 10, and preferably between 1 and 3 grooves in contact with the shaft.

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